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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,180	09/28/2006	Djamschid Amirzadeh-Ast	DNAG-320	5207
24972 7590 08/05/2008 FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198				
EXAMINER COHEN, STEFANIE J				
ART UNIT		PAPER NUMBER		
4162				
MAIL DATE		DELIVERY MODE		
08/05/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/578,180

**Applicant(s)**

AMIRZADEH-ASL ET AL.

**Examiner**

STEFANIE COHEN

**Art Unit**

4162

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 5/4/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 18, 22 and 29-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17 and 18 recite the limitation "the inorganic solid particles" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the flux" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 29 and 30 recite the limitation "the hot liquid melts" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16, 19-21 and 23 are rejected under 35 U.S.C. 102(b) as being unpatentable by Lailach et al (3823009). Lailach, claim 7, teaches agglomerated iron- containing titanium ores comprising, titanium oxide and a water soluble organic polymer. This mixture is heated up until 800 to 1000°C to reach its hardening temperature.

Regarding claims 19-20, Lailach, claim 5, ore particles mixed in the amount of .005 to 10% by weight with a water-soluble organic polymer.

Regarding claim 21, Lailach, ex 1, teaches ilmenite sand, an inorganic solid, comprising titanium oxide and iron oxide.

Regarding claim 23, Lailach, col. 3 lines 9-11, teaches polyethyleneimine and acylamides as examples of water- soluble organic polymers which comprise nitrogen.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

Claim 17-18, 22, 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lailach et al (3823009). Lailach teaches agglomerated iron- containing titanium ores comprising, titanium oxide and a water, soluble organic polymer where this mixture is heated up till 800 to 1000oC to reach its hardening temperature. Although Lailach further teaches the ore, which is an inorganic solid, comprising particles ranging from a size of 40 to 1000 microns, Lailach does not teach a percentage of the particles being a certain size. It would have been obvious to one of ordinary skill in the art at the time of the invention to have a small distribution in particle size to obtain an even distribution of particles on the surface of a furnace and to obtain optimal refractory properties when used in a furnace.

Regarding claim 24, it would have been obvious to one of ordinary skill in the art at the time of the invention to use old plastic for conservation of the environment.

Regarding claims 25-26, the mixture of ores and polymers are heated up till 800 to 1000°C. Lailach does not teach the steps of mixing the plastic and inorganic solids together. It would have been obvious to one of ordinary skill in the art at the time of the invention that mixing the plastic in solid form or in molten form would not effect the final composition as long as the mixture is uniformly mixed and heated.

Regarding claim 27-28, Lailach, col. 1 lines 33-34, teaches the process making agglomerated iron- containing titanium ores comprising, titanium oxide and a water, soluble organic polymer results in pellets or briquettes but does not teach cooling the mixture to a solidified form. It would have been obvious to one of ordinary skill in the art at the time of the invention that to make these pellets, it would be necessary to cool the mixture and allow it to solidify. It would have been obvious to one of ordinary skill in the art at the time of the invention that once the mixture cools, it can be broken into smaller pieces and still have the same composition.

Regarding claims 29-30, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the flow of the plastic/flux mixture to obtain the necessary refractory properties and composition.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Lailach et al (3823009) in view of Buysch et al. (5663408). Lailach, claim 1, teaches combining iron-containing titanium ores oxides or hydrates of titanium but does not teach about specific types of titanium oxide. Buysch, col. 3 lines 28-48, teaches several different titanium oxides and states that synthetic titanium oxides are particularly pure. It would have been obvious to one of ordinary skill in the art at the time of the invention to use synthetic titanium oxide in an organic solids mixture to obtain a pure mixture with optimal performance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEFANIE COHEN whose telephone number is (571)270-5836. The examiner can normally be reached on Monday through Thursday 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jenny McNeil can be reached on 5712721540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stefanie Cohen

7/28/2008

SC  
/Jennifer McNeil/  
Supervisory Patent Examiner, Art Unit 4162